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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/783,844

02/20/2004

Markus Paul Josef Mergens

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04/22/2005

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EXAMINER

WILSON, SCOTT R

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

11.7

Office Action Summary	Application No. 10/783,844	Applicant(s) JOSEF MERGENS ET AL.	
	Examiner Scott R. Wilson	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13, 19-37 and 48 is/are allowed.
- 6) ☒ Claim(s) 14, 16 and 38-41 is/are rejected.
- 7) ☒ Claim(s) 15, 17, 18 and 42-47 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/23/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 38-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Avery. As to claim 38, Avery discloses an electrostatic discharge (ESD) protection circuit in a semiconductor integrated circuit (IC) having protected circuitry, comprising: a silicon controlled rectifier (SCR) (Abstract) for coupling between a supply line of the IC and a ground line (Figure 8); a trigger device for coupling from the supply line to a second gate defined by an N-well of the SCR (col. 3, lines 61-63); an N-well resistor for coupling between the second gate and the supply line (col. 4, lines 6-10); and a shunt resistor for coupling between the second gate and the supply line, wherein said shunt resistor has a resistance value lower than the N-well resistor (col. 4, lines 13-15) and (col. 4, lines 19-22).

As to claim 39, Avery discloses (col. 4, lines 6-10) that the N-well resistor comprises an intrinsic resistance of the N-well of the protection circuit.

As to claim 40, Avery discloses (col. 4, lines 13-15) that the shunt resistor is a fixed resistor.

As to claim 41, Avery discloses (col. 4, lines 67-68) and (col. 5, lines 1-5) that the trigger device is a Zener diode in a reverse conduction direction.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russ et al. in view of Lee et al.. As to claim 14, Russ et al., Figure 1B, discloses an N-well (104), a P-well (106), positioned adjacent to said N-well and forming a junction therebetween; a P+ region (108) interspersed in said N-well, and forming an emitter of a PNP transistor (132) of said SCR and adapted for coupling to a supply line of the IC, an N+ region (110), disposed over said junction of said N-well and P-well, forming the drain (125) of said GGNMOS transistor; an additional N+ region (112), forming an emitter of the NPN transistor (131) and the source (127) of said GGNMOS transistor, disposed in said P-well, said additional N+ region for coupling to ground; a gate region (128), disposed in parallel and between the two N+ regions (110) and (112), over said P-well, and for coupling to ground, a second P+ region (114), forming said first gate of said SCR, disposed in said P-well and parallel with said other N+ regions, said second P+ region for coupling to ground. Russ et al., Figure 1B, does not disclose expressly the P+ region (108) formed as a plurality of regions or a separate N+ region coupled to the N+ drain region of the GGNMOS, and formed from a plurality of regions. Lee et al., Figure 3, discloses a P+ region (570) formed as a plurality of linked P+ regions, and an N+ region (490) formed as a plurality of N+ regions. At the time of invention, it would have been obvious to a person of ordinary skill in the art to form the P+ region (108) of Russ et al. as a plurality of regions, and to form a separate N+ region as a plurality of regions, coupled to the drain region of the GGNMOS. The motivation for doing so would have been to adjust the trigger voltage of the ESD device (Lee et al., col. 8, lines 7-10). Therefore, it would have been obvious to combine Russ et al., Figure 1B with Lee et al., Figure 3 to obtain the invention as specified in claim 14.

As to claim 16, Russ et al., Figure 1B, discloses that the P+ layer (108), a portion of the N layer (112) and P+ layer (114) are formed with an overlying silicide layer (118A), (118C) and (118S), respectively (col. 3, line 55).

Allowable Subject Matter

Claims 1-13, 19-37 and 48 are allowed.

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800



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Claims 15, 17, 18 and 42-47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott R. Wilson whose telephone number is 571-272-1925. The examiner can normally be reached on M-F 8:30 - 4:30 Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SRW
April 8, 2005

SCOTT R. WILSON
PATENT EXAMINER
TECHNOLOGY CENTER 2800